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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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KOLISCH HARTWELL, P.C. 200 PACIFIC BUILDING 520 SW YAMHILL STREET PORTLAND, OR 97204			EXAMINER BATTULA, PRADEEP CHOUDARY	
			ART UNIT 3722	PAPER NUMBER
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Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/661,310

Applicant(s)

MARINE ET AL.

Examiner

Pradeep C. Battula

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 24 August 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 2-13 and 34-59 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☒ Claim(s) 35-47 is/are allowed.
- 6) ☒ Claim(s) 2,3,5,6,8-13,34,49-52 and 54-59 is/are rejected.
- 7) ☒ Claim(s) 4, 7, 53 is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
- Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
- Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. _____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☐ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☐ Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____

- 4) ☒ Interview Summary (PTO-413)
Paper No(s)/Mail Date. 8/16/05
- 5) ☐ Notice of Informal Patent Application
- 6) ☐ Other: _____

DETAILED ACTION

This action is in response to reply filed on August 24, 2005

Allowable Subject Matter

The indicated allowability of claim 34 is withdrawn in view of the newly discovered reference(s) to Chung (U.S. 6,502,123). Rejections based on the cited reference(s) follow.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 52 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. It is unclear to the examiner whether there are teeth of different lengths on the same gear.

Claim Objections

Claims 49, 53 are objected to because of the following informalities: There is an apostrophe in the second line of the second paragraph of Claim 49 reading "structure including a' cam lob..." The apostrophe after the "a" should be deleted. In regards to Claim 53, the third line needs a "the" inserted between "of" and "driven". Appropriate correction is required.

Claim Rejections - 35 USC § 102

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

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A person shall be entitled to a patent unless –

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

Claim 2, 3, 5, 6, 8 – 12, 34, 49 – 51, and 54 – 59 rejected under 35 U.S.C. 102(e) as being anticipated by Chung (U.S. 6,502,123).

In regards to Claim 2, Chung discloses a drive gear 10 adapted to receive rotational input (Column 3, Lines 16 – 19), the drive gear having a drive cam structure 18 and a set of drive teeth 16, the drive cam structure and including a cam recess region having and a drive cam-bearing surface (edge of 18 is recessed from the edge of the gear and has a bearing surface; Figure 1A attachment); and a driven gear 12 or 14 having a driven cam structure 22A and a set of driven teeth 4j, wherein the driven cam structure includes at least two bearing surface regions 22A and 22B (Column 3, Lines 31 – 43) and a cam lobe portion 4k; wherein the driven cam structure is adapted to engage the drive cam structure and align the set of drive teeth with the set of driven teeth to position the set of drive teeth to engage the set of driven teeth for selective transmission of the rotational input (Column 3, Lines 45 – 62; 22A and 22B guide along 18 before teeth 16 engage teeth 4j); wherein the driven gear has an engaged configuration, in which the driven teeth engage the drive teeth to cause the driven gear to counter rotate relative to the drive gear, and further wherein the driven gear has at least two non-rotating configurations (Column 3, Lines 16 – 62), in which the drive cam structure 18 and the driven cam structure 22A are adapted to prevent the driven gear

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from rotating; and wherein, when the gear system is in the engaged configuration, the cam lobe portion 4k engages the cam recess region and aligns the drive teeth and the driven teeth for rotational engagement (Figure 1A attachment; when first tooth 4j aligns with first tooth 16), and further wherein, when the gear system is in either of the non-rotating configurations, one of the bearing surface regions slides along the drive cam-bearing surface (surface of 22A) forming a contact area as the drive gear rotates, preventing the driven gear from rotating (Figure 1A attachment).

In regards to Claim 3, as applied to Claim 2, Chung further discloses wherein the cam recess region includes alignment guide surfaces (top of the recess region; Figure 1B, section of drive gear under gear 14) adapted to guide the cam lobe portion 22A or 22B into the cam recess and align the drive teeth and the driven teeth for engagement (Figure 1A, Items 22A, 22B).

In regards to Claim 5, as applied to Claim 2, Chung further discloses wherein the drive cam-bearing surface includes a surface extension region (the extended arcuate shape of item 18; Figure 1A) adapted to increase the contact area between the drive cam-bearing surface (outer surface of 18, Figure 1A attachment) and the bearing surface region (surface of 22A) (Figure 1A, Items 18, 22A).

In regards to Claim 6, as applied to Claim 5, Chung further discloses wherein the surface extension region is an axially upstanding arcuate perimeter rim (Figure 1A, Item 18).

In regards to Claim 8, as applied to Claim 2, Chung further discloses wherein the drive cam structure includes a perimeter flange (area outside structure 18; Figure 1A)

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adapted to axially align the drive gear and the driven gear (area of gear 10, underneath gear 14 is providing axial alignment).

In regards to Claim 9, as applied to Claim 8, Chung further discloses wherein the perimeter flange includes the drive cam-bearing surface (Figure 1A attachment; drive cam bar surface recessed behind flange as shown in Figure 4 of application).

In regards to Claim 10, as applied to Claim 9, Chung further discloses wherein the cam lobe portion is adapted to slidingly engage the drive cam-bearing surface on the perimeter flange when the gear system is in either of the non-rotating configurations (Figure 1A attachment shows the lobe sliding along arc shaped bearing surface).

In regards to Claim 11, as applied to Claim 2, Chung further discloses an axial alignment structure attached to at least one of the drive gear and driven gear and configured to extend at least partially over the other of the drive gear and driven gear (Figure 1A attachment, the flange of the drive gear extends over the bottom portion of the driven gears and is therefore is an axial alignment structure).

In regards to Claim 12, as applied to Claim 11, Chung further discloses wherein the axial alignment structure includes a disk (Figure 1A; the axial alignment structure includes gear 10 and gear 10 is a disk).

In regards to Claim 13, as applied to Claim 2, Chung discloses the claimed invention except for one of the drive and driven gear is plastic. Applicant discloses there are various suitable materials for the gear structures (Paragraph 0026) therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use plastic material for the gears because it has been held to be

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within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

In regards to Claim 34, Chung discloses a gear system for providing intermittent motion, the system comprising: a drive gear 10 having a set of drive teeth 16 and a means to selectively engage a set of driven teeth on a corresponding driven gear 12 and 14; a driven gear having a set of driven teeth 4j including a portion of extended driven teeth that are longer axially than a remaining portion of driven teeth 22A and 22B of the set (Column 3, Lines 31 – 43; Figure 1A attachment) and a means to align the set of driven teeth with the set of drive teeth of the drive gear (22A and 22B guide along 18 before teeth 16 engage teeth 4j); and at least two rotation locking means for preventing the driven gear from rotating in response to a rotation of the drive gear (22A and 22B are teeth and also rotation locking means since they prevent rotation).

In regards to Claim 49, Chung discloses a gear system for providing intermittent motion, comprising: a drive gear 10 adapted to receive rotational input, the drive gear having a drive cam 18 structure and a set of drive teeth 16, the drive cam structure including a cam recess region that includes a bearing surface (edge of 18 is recessed from the edge of the gear and has a bearing surface) and a driven gear 14 having a driven cam structure 22A and a set of driven teeth 4j, the driven cam structure including a cam lobe portion 4k that includes a bearing surface (the end of 22A) configured to engage the cam recess bearing surface upon engagement of the drive teeth and the driven teeth; wherein the driven gear and the drive gear are operatively associated for

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selective transmission of the rotational input; wherein the driven gear has an engaged orientation (pins 16 are engaged with teeth 4j), in which the drive teeth engage the driven teeth to cause the driven gear to counter rotate relative to the drive gear, and further wherein the driven gear has at least two non-rotating orientations (either cam is 180 degrees out), in which the drive cam structure and the driven cam structure are adapted to prevent the driven gear from rotating (Column 3, Lines 45 – 62; Figure 1A attachment)

In regards to Claim 50, as applied to Claim 49, Chung further discloses wherein the cam recess bearing surface 18 is adjacent (next to) the drive teeth 16 and the cam lobe bearing surface is adjacent the driven teeth (22A is next to 4j) (Figure 1A attachment).

In regards to Claim 51, as applied to Claim 49, Chung further discloses wherein the cam recess region includes alignment guide surfaces (18 holds the gear until 16 engages 4j) adapted to guide the cam lobe bearing surface into the cam recess region and align the drive teeth and the driven teeth for engagement (Figure 1A attachment).

In regards to Claim 54 as applied to Claim 49, Chung further discloses wherein the drive cam structure includes a perimeter flange (pins 16 sit on an edge which considered a flange) adapted to axially align the drive gear and the driven gear (Figure 1A attachment).

In regards to Claim 55 as applied to Claim 54, Chung further discloses wherein the perimeter flange includes a drive cam-bearing surface (Figure 1A attachment).

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In regards to Claim 56, as applied to Claim 55, Chung further discloses wherein the cam lobe portion is adapted to slidingly engage the drive cam-bearing surface on the perimeter flange when the gear system is in either of the non-rotating configurations (Figure 1A attachment shows the lobe sliding along arc shaped bearing surface).

In regards to Claim 57, as applied to Claim 49, Chung further discloses further comprising an axial alignment structure attached to at least one of the drive gear and driven gear and configured to extend at least partially over the other of the drive gear and driven gear (Figure 1A attachment, the flange of the drive gear extends over the bottom portion of the driven gears and is therefore is an axial alignment structure).

In regards to Claim 58, as applied to Claim 57, Chung further discloses the axial alignment structure includes a disk (Figure 1A attachment; Flange is part of a circular gear and therefore a disk).

In regards to Claim 59, as applied to Claim 49, Chung discloses the claimed invention except for one of the drive and driven gear is plastic. Applicant discloses there are various suitable materials for the gear structures (Paragraph 0026) therefore it would have been obvious to a person having ordinary skill in the art at the time the invention was made to use plastic material for the gears because it has been held to be within the general skill of a worker in the art to select a known material on the basis of its suitability for the intended use as a matter of obvious design choice. *Sinclair & Carroll Co. v. Interchemical Corp.*, 325 U.S. 327, 65 USPQ 297 (1945).

Response to Arguments

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Applicant's arguments with respect to Claims 2, 3, 5, 6, 8-12, 34, and 49-59 have been considered but are moot in view of the new ground(s) of rejection.

Allowable Subject Matter

Claims 35 – 48 are allowed. The prior art does not alone or in combination disclose a gear system for providing intermittent motion wherein a drive gear and driven gear are present wherein there is a portion of extended drive teeth which are longer axially than a remaining portion of teeth of the set. Chung only teaches of different sized teeth on the driven gear.

Claims 4, 7, 53 are objected to as being dependent upon a rejected base claim, but would be allowable if rewritten in independent form including all of the limitations of the base claim and any intervening claims.

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Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Pradeep C. Battula whose telephone number is 571-272-2142. The examiner can normally be reached on Monday - Thursday 7:00AM - 4:30PM.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Monica S. Carter can be reached on 571-272-4475. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

PCB
Patent Examiner
April 26, 2007



MONICA CARTER
SUPERVISORY PATENT EXAMINER

FIG. 1A

